

8-24-00

The Zisman Law Firm
A Professional Corporation

200 Renaissance Place
714 Jackson Street
Dallas, Texas 75202
214.745.1300

Telecopier: 214.720.0748
Toll Free: 1.800.242.5053

August 22, 2000

E-mail: zislaw@zisman.net
Web: www.zislaw.com

Assistant Commissioner for Patents
Washington, DC 20231
New Application

Via Express Mail No. EJ754033765US

Re: New Patent Application
IMPROVED FLOORING SYSTEM FOR VEHICLE
Eddie L. Willis

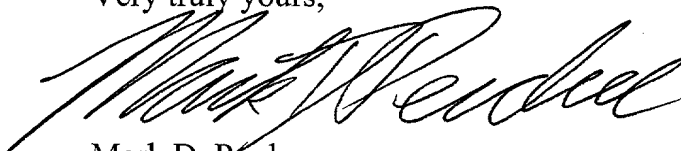
Dear Sir:

Enclosed find the following for filing:

- Patent application (17 sheets);
- Drawings (1 sheet);
- Declaration (3 sheets);
- Verified Statement Claiming Small Entity Status (2 sheets);
- Firm Check in the amount of \$385 for the filing fee;
- Information Disclosure Statement and PTO1449; and
- Our return postcard, which we would appreciate your date stamping and returning to us.

Thank you for your attention and assistance in this matter.

Very truly yours,



Mark D. Perdue
Reg. No. 36,890

Attorney Docket No. WILLIS
Applicant or Patentee: Eddie L. Willis
Serial or Patent No.: not yet assigned
Filed or Issued: Herewith

For: IMPROVED FLOORING SYSTEM FOR VEHICLE

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 C.F.R. 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled:

IMPROVED FLOORING SYSTEM FOR VEHICLE

described in ☒ the specification filed herewith

☐ application serial no. _____, filed _____.

☐ patent no. _____, issued _____.

I have not assigned, granted conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent invention under 37 C.F.R. 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 C.F.R. 1.9(d) or a nonprofit organization under 37 C.F.R. 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ no such person, concern, or organization

☐ persons, concerns or organizations listed below*

*NOTE: separate verified statements are required from each person, concern or organization having rights to the invention averring to their status as small entities. (37 C.F.R. 1.27)

NAME _____

ADDRESS _____

Verified Statement Claiming Small Entity Status (Independent Inventor)

00644159 08300

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR:

EDDIE L. WILLIS

SIGNATURE OF INVENTOR:



DATE:

08/22/00

IMPROVED FLOORING SYSTEM FOR VEHICLE

BACKGROUND OF INVENTION

1. **Field of Invention**— The present invention relates generally to flooring systems for vehicles adapted to carry cargo, such as trailers. More specifically, the present invention relates to flooring systems having the ability to easily repair or replace the structural members comprising the load-bearing floor.

2. **Summary of Prior Art**— Commonly, the load-bearing floors of many cargo-carrying vehicles (trailers and railcars principally) comprise wooden planks, usually 2x6 or 2x8. These floors are strong and light in weight, but are susceptible to damage and deterioration in use.

The typical construction of these floors provides a generally rectangular wrought iron or steel frame that is welded together. If one or more of the wooden planks becomes damaged or deteriorates and requires replacement, the frame must be cut apart and reassembled using various tools, including welding and cutting torches.

U. S. Patent Number 4,940,380, July 10, 1990, to *Ballyns, et al.* discloses a platform for a lift used in conjunction with a truck. Wooden planks are held in a frame

that can be disassembled to permit selective removal of the planks. This disassembly causes the entire frame structure to effectively be disassembled and is not structurally sound because the removable pieces are coupled to one another. Thus this construction is not adapted to use in a trailer or vehicle in which the floor is a major structural member.

5

A need exists, therefore, for an improved flooring system for cargo-carrying vehicles that permits selective removal and replacement of one or more of the flooring members that comprise the floor surface of the vehicle. The system should be relatively easy to operate and should not require complete disassembly of the vehicle or a major portion thereof.

SUMMARY OF THE INVENTION

It is a general object of the present invention to provide an improved flooring system for cargo-carrying vehicles. This and other objects of the present invention are achieved by providing a plurality of flooring members. A pair of parallel, spaced-apart frame rails confines the flooring members therebetween in closely spaced adjacent relation to form a floor surface. A pair of end members extends transversely between the frame rails at the ends thereof to secure the frame members against movement parallel to the frame rails. At least one of the end members is selectively moveable relative to the frame rails to permit selective removal of one or more of the flooring members from between the frame rails.

According to the preferred embodiment of the present invention, the flooring members are wooden planks.

According to the preferred embodiment of the present invention, the frame rails are formed of angle iron.

According to the preferred embodiment of the present invention, at least one of the end members is formed of c-channel.

According to the preferred embodiment of the present invention another of the end

members is hinged along its length to permit a portion of the end member confining the flooring members against movement to be rotated to a position in which the flooring members can be removed from between the frame rails.

5 According to the preferred embodiment of the present invention, the cargo-carrying vehicle is a trailer.

Other objects, features, and advantages of the present invention will become apparent with reference to the drawings and detailed description of the invention, which follow.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an elevation view of a cargo-carrying vehicle of the type contemplated by the present invention.

5

Figure 2 is a perspective view of a cargo-carrying vehicle of the type contemplated by the present invention, illustrating the flooring system according to the present invention.

Figure 3 is a plan view of the flooring system according to the present invention.

Figure 4 is a section view, taken along the line 4--4 in Figure 3, of an end member of the flooring system according to the present invention.

Figure 5 is a section view, taken along the line 5--5 in Figure 3, of an end member of the flooring system according to the present invention.

Figure 6 is a section view, taken along the line 6--6 in Figure 3, of a frame rail of the flooring system according to the present invention.

Figure 7 is a section view, taken along the line 7--7 in Figure 3, of a portion of the

end member of Figure 5.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the Figures, and particularly to Figures 1 and 2, the numeral 11 designated a cargo-carrying vehicle or trailer of the type contemplated by the present invention. Trailer 11 has a hitch or other means for attaching the trailer, for towing, to another vehicle. Trailer 11, also has a load-bearing floor surface comprised of a plurality of wooden planks 15, which may be 2x4, 2x6, or 2x8 planks or boards.

The flooring surface provides the main load-bearing or cargo-carrying surface of trailer 11. Trailer 11 may be provided with upstanding rails 17 to assist in confining the cargo or load on the flooring surface. While a relatively small (e.g. 16 foot) trailer is illustrated, the present invention is useful with a variety of cargo-carrying vehicles, including the trailers used with tractor-trailers, rail cars, and the like, which employ flooring assemblies constructed primarily of planks arranged as described herein, with some minor variations.

Figure 3 is a plan view of the flooring system according to the present invention. The flooring surface, as stated above, comprises a plurality of planks 15, in closely spaced relation and extending longitudinally along the length of trailer 11. Planks or flooring members 15 are maintained in closely spaced relation by a pair of parallel frame rails 19. Frame rails 19 are preferably formed of angle iron (shown in cross section in Figure 4). While angle iron is preferred, any configuration capable of maintaining the

flooring members in closely spaced relation and having sufficient strength to support the flooring members and a load should be adequate.

A pair of end members 21, 23 transversely connect frame rails 19 and form a rectilinear frame for flooring members 15. One of frame members 21 is constructed of c-channel, which is may be either an extruded wrought iron product or welded from angle iron and bar stock to have the cross-sectional configuration shown in Figure 5. This cross-section permits the end member to confine flooring members from longitudinal movement relative to frame rails 19, and also prevents inadvertent removal of flooring members 15 from the frame by "capturing" their ends between the horizontal "legs" of the c-channel configuration.

Another end member 23, opposite first end member 21, serves the same purpose and is formed in a c-channel configuration. However, as shown in section view in Figure 5, a hinge is placed between one "leg" of a piece of angle iron and connects to it a section of flat bar stock. End member 23 thus is hinged along its length and the angle iron portion may be rotated from a closed position, in which flooring members 15 are confined against longitudinal movement relative to frame rails and their ends are "captured" within the c-channel configuration, to an open position (shown in phantom in Figure 6), in which one or more of flooring members 15 can be removed and replaced. According to the preferred embodiment of the present invention, hinged end member 23 is placed opposite

the end of trailer 15 having the hitch or attachment means 13. Nevertheless, both ends or the opposite end of trailer may be fitted with hinged end member 23.

Figure 7 is a partial section view illustrating a preferred means for securing the movable portion of end member 23 in the closed position. A length of bar stock 29 is welded or otherwise secured to each end of the angle iron portion of end member 23. A stud or portion of a bolt 31 is welded to bar stock 29. In the closed position, bar stock 29 lies just inside the upstanding or vertical "leg" of the angle iron of frame rail 19. A threaded stud 31 extends through a corresponding hole in the horizontal "leg" of the angle iron. A nut 33 is used to secure stud 31, bar stock 29 and end member 23 in the closed position, securing flooring members 15 against movement within and removal from the frame defined by frame rails 19 and end members 21, 23.

In operation, floor members or planks 15 are secured within the frame of trailer 11 and perform their intended function with end member 23 in the closed position. When planks 15 deteriorate or become damaged, nuts 33 can be removed, end member 23 moved to the open position, and selected ones or all of the planks removed and replaced.

The present invention offers a number of advantages over the prior art. Principally, it permits selective removal and replacement of flooring members without complicated disassembly operations such as cutting and re-welding the frame or

otherwise completely disassembling the trailer. Furthermore, the movable end member may be "retrofit" to existing vehicles.

The invention has been described with reference to a preferred embodiment
5 thereof. Those skilled in the art will understand that it is not thus limited, but is capable of variation and modification without departing from the scope and spirit of the invention.

1. An improved flooring system for a cargo-carrying vehicle, the system comprising:
a plurality of flooring members;
a pair of parallel, spaced-apart frame rails confining the flooring members
therebetween in closely spaced adjacent relation to form a floor surface; and

5 a pair of end members extending transversely between the frame rails at the ends
thereof to secure the frame members against movement parallel to the frame rails, at least
one of the end members being selectively moveable relative to the frame rails to permit
selective removal of one or more of the flooring members from between the frame rails.

2. The flooring system according to claim 1, wherein the flooring members are
wooden planks.

3. The flooring system according to claim 1, wherein the frame rails are formed of
angle iron.

4. The flooring system according to claim 2, wherein at least one of the end
members is formed of c-channel.

5. The flooring system according to claim 4, wherein another of the end members is
20 hinged along its length to permit a portion of the end member confining the flooring
members against movement to be rotated to a position in which the flooring members can

be removed from between the frame rails.

6. An improved flooring system for a vehicle, the system comprising:
a pair of spaced-apart, parallel frame rails;
a plurality of flooring members extending longitudinally between the frame rails
and held in closely spaced adjacent relation by the frame rails;

5 a first end member extending transversely between the frame rails at one end
thereof, the end member confining the flooring members against longitudinal movement
between the frame rails;

a second end member extending transversely between the frame rails at an end
opposite the first end member, the second end member being movable between a first
position confining the floor members against longitudinal movement between the frame
rails and a second position permitting selective removal of one or more of the flooring
members.

7. The flooring system according to claim 6, wherein the flooring members are
wooden planks.

8. The flooring system according to claim 6, wherein the frame rails are formed of
angle iron.

9. The flooring system according to claim 2, wherein the first end member is formed
of c-channel.

10. The flooring system according to claim 9, wherein the second end member is hinged along its length to permit a portion of the end member confining the flooring members against movement to be rotated to a position in which the flooring members can be removed from between the frame rails.

11. An improved flooring system for a cargo carrying vehicle, the system comprising:
a plurality of flooring planks having a length and a width;
a pair of parallel, spaced-apart frame rails confining the flooring planks lengthwise
therebetween in closely spaced adjacent relation to form a floor surface;

5 a first end member extending transversely between the frame rails at one end
thereof, the end member confining the flooring planks against lengthwise movement;
a second end member extending transversely between the frame rails at an end
opposite the first end member, the second end member being hinged so as to be movable
between a closed position confining the flooring planks against lengthwise movement
10 between the frame rails and an open position permitting selective removal of one or more
of the flooring planks.

12. The flooring system according to claim 11, wherein the flooring planks are 2 are
wooden planks.

13. The flooring system according to claim 11, wherein the frame rails are formed of
angle iron.

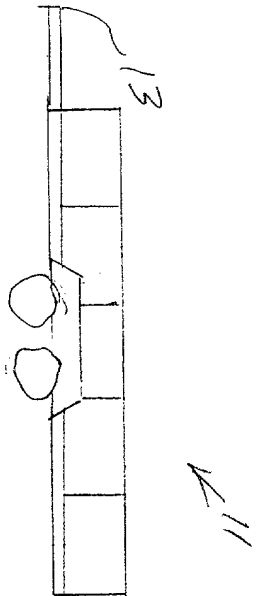
14. The flooring system according to claim 11, wherein the first end member is formed
20 of c-channel.

15. The flooring system according to claim 11, wherein the second end member is formed of c-channel.

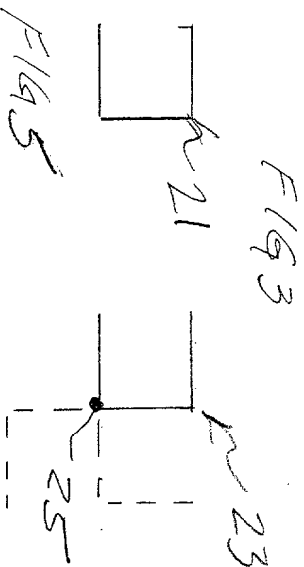
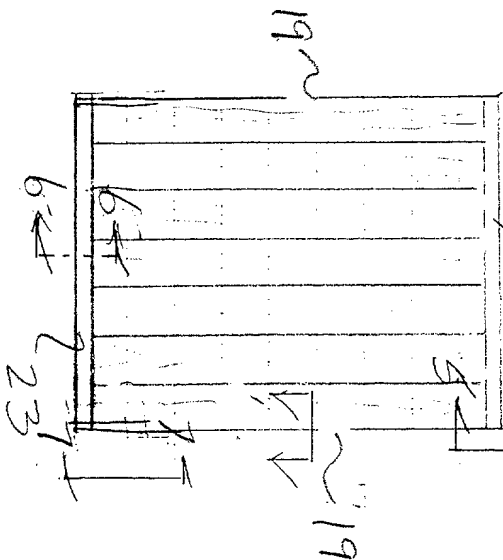
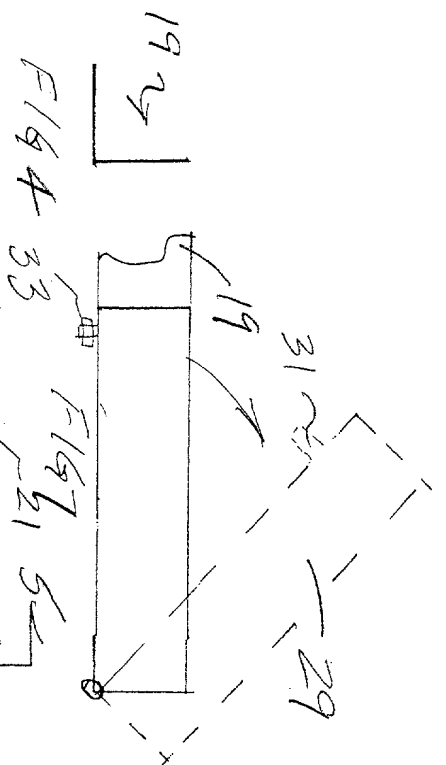
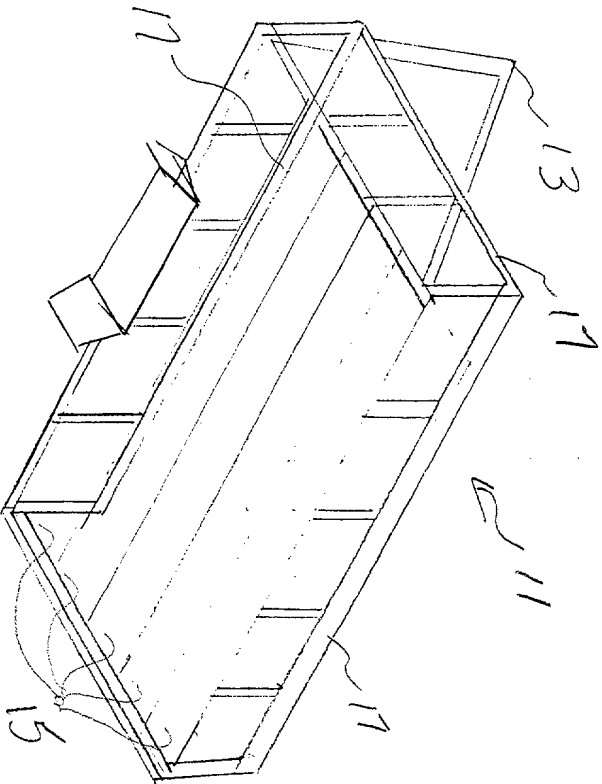
09:44:19.08300

ABSTRACT OF THE INVENTION

A cargo-carrying vehicle has a plurality of flooring members. A pair of parallel, spaced-apart frame rails confines the flooring members therebetween in closely spaced adjacent relation to form a floor surface. A pair of end members extends transversely between the frame rails at the ends thereof to secure the frame members against movement parallel to the frame rails. At least one of the end members is selectively moveable relative to the frame rails to permit selective removal of one or more of the flooring members from between the frame rails.



F/G 2



176

F19Z

[illegible]

**PATENT APPLICATION DECLARATION AND
POWER OF ATTORNEY**

As a below-named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

IMPROVED FLOORING SYSTEM FOR VEHICLE

the specification of which: (check one)

☒ is attached hereto; or

☐ was filed on _____ as Application Serial No. _____ and was amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35 United States Code, Section 119 (a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International Application which designated at least one country other than the United States, listed below. I have also identified below any foreign application for patent or inventor's certificate, or PCT International Application having a filing date before that of the earliest application from which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

<i>Number</i>	<i>Country</i>	<i>Filing Date</i>	<i>Yes</i>	<i>No</i>
NONE				

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

<i>Provisional Application No.</i>	<i>Filing Date</i>	<i>Status</i>
NONE		

Demographic characteristics		Health status		Healthcare utilization		Healthcare costs		Healthcare quality		Healthcare access	
Variable	Value	Variable	Value	Variable	Value	Variable	Value	Variable	Value	Variable	Value
Age	65.2	Chronic conditions	45.3	Physician visits	12.5	Medication costs	\$1,200	Health status	75.2	Healthcare access	85.3
Gender	52.1	Disability	32.1	Hospitalizations	3.2	Procedure costs	\$2,500	Healthcare quality	80.1	Healthcare access	78.4
Ethnicity	68.5	Long-term care	15.2	Emergency department	1.5	Diagnostic tests	\$800	Healthcare quality	72.3	Healthcare access	70.1
Education	72.3	Home care	8.7	Outpatient surgery	2.1	Preventive care	\$300	Healthcare quality	88.5	Healthcare access	82.7
Income	78.9	Skilled nursing	4.3	Specialty care	1.8	Health status	70.5	Healthcare quality	75.8	Healthcare access	73.2
Marital status	65.4	Respite care	2.1	Referral to specialist	0.9	Health status	78.9	Healthcare quality	82.1	Healthcare access	79.5
Living arrangement	58.7	Adult day care	1.2	Referral to primary care	0.5	Health status	82.1	Healthcare quality	85.4	Healthcare access	81.3
Employment	50.2	Meals on wheels	0.8	Referral to mental health	0.3	Health status	85.3	Healthcare quality	88.7	Healthcare access	84.6
Transportation	45.1	Transportation services	0.5	Referral to substance abuse	0.2	Health status	88.5	Healthcare quality	90.1	Healthcare access	87.8
Health insurance	70.3	Health insurance	60.2	Referral to palliative care	0.1	Health status	90.1	Healthcare quality	92.3	Healthcare access	90.5
Healthcare provider	65.8	Healthcare provider	55.1	Referral to hospice	0.1	Health status	92.3	Healthcare quality	94.5	Healthcare access	92.7
Healthcare setting	60.4	Healthcare setting	50.3	Referral to long-term care	0.1	Health status	94.5	Healthcare quality	96.7	Healthcare access	94.9
Healthcare type	55.2	Healthcare type	45.1	Referral to rehabilitation	0.1	Health status	96.7	Healthcare quality	98.9	Healthcare access	97.1
Healthcare duration	50.1	Healthcare duration	40.2	Referral to community care	0.1	Health status	98.9	Healthcare quality	100.0	Healthcare access	99.2
Healthcare frequency	45.3	Healthcare frequency	35.4	Referral to home care	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare intensity	40.2	Healthcare intensity	30.3	Referral to respite care	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare complexity	35.1	Healthcare complexity	25.2	Referral to adult day care	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare coordination	30.2	Healthcare coordination	20.3	Referral to meals on wheels	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare communication	25.3	Healthcare communication	15.4	Referral to transportation services	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare collaboration	20.4	Healthcare collaboration	10.5	Referral to health insurance	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare partnership	15.5	Healthcare partnership	5.6	Referral to healthcare provider	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare integration	10.6	Healthcare integration	0.7	Referral to healthcare setting	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare alignment	5.7	Healthcare alignment	0.8	Referral to healthcare type	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare consistency	0.8	Healthcare consistency	0.9	Referral to healthcare duration	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare compatibility	0.9	Healthcare compatibility	1.0	Referral to healthcare frequency	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare complementarity	1.0	Healthcare complementarity	1.1	Referral to healthcare intensity	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare substitutability	1.1	Healthcare substitutability	1.2	Referral to healthcare complexity	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare separability	1.2	Healthcare separability	1.3	Referral to healthcare coordination	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare jointness	1.3	Healthcare jointness	1.4	Referral to healthcare communication	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare nonseparability	1.4	Healthcare nonseparability	1.5	Referral to healthcare collaboration	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare indivisibility	1.5	Healthcare indivisibility	1.6	Referral to healthcare partnership	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare nonjointness	1.6	Healthcare nonjointness	1.7	Referral to healthcare integration	0.1	Health status	100.0	Healthcare quality	100.0	Healthcare access	100.0
Healthcare non											

Status

Power of Attorney

Page 2

Citizenship__US

Date of signature.

8/22/00

Residence

3716 Pomerooy Dr. Dallas, Tx 75233

Post Office Address

Same as Residence

Table 1. Demographic characteristics of the study population	
Age (years)	50.0 ± 10.0
Gender	
Male	50.0
Female	50.0
Education (years)	12.0 ± 2.0
Occupation	
Professional	50.0
Managerial	50.0
Technical	50.0
Service	50.0
Unemployed	50.0
Marital status	
Married	50.0
Single	50.0
Divorced	50.0
Widowed	50.0
Health status	
Good	50.0
Fair	50.0
Poor	50.0
Smoking status	
Smoker	50.0
Non-smoker	50.0
Alcohol consumption	
Regular	50.0
Occasional	50.0
Never	50.0
Family size	3.0 ± 1.0
Income (USD/month)	1000.0 ± 500.0
Health insurance	
Yes	50.0
No	50.0